

INTERTEK TESTING SERVICES

EXHIBIT 7

INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

7.0 Instruction Manual

Attached is a preliminary copy of the Instruction Manual.

The FCC information to user can be found in the last page of this manual.

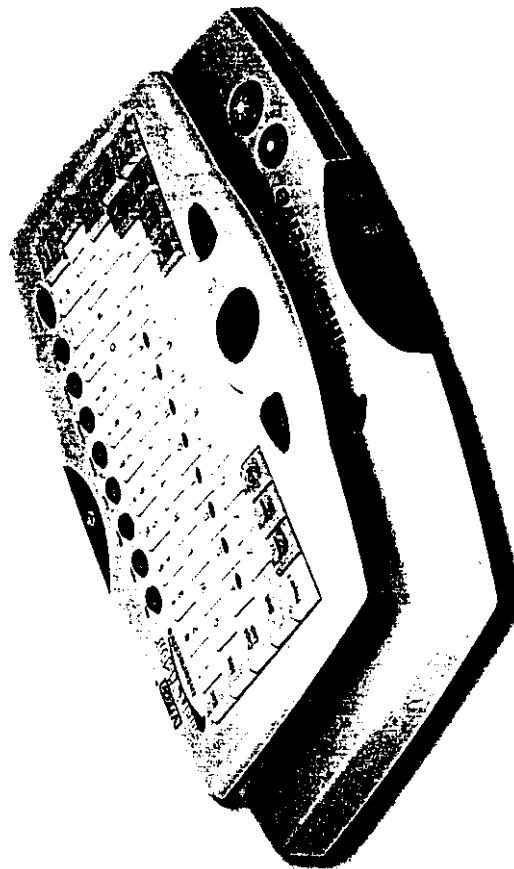
This manual will be provided to the end-user with each unit sold/leased in the United States.



Smart Vision™

Interactive

USER'S MANUAL



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Smart Vision™

Interactive

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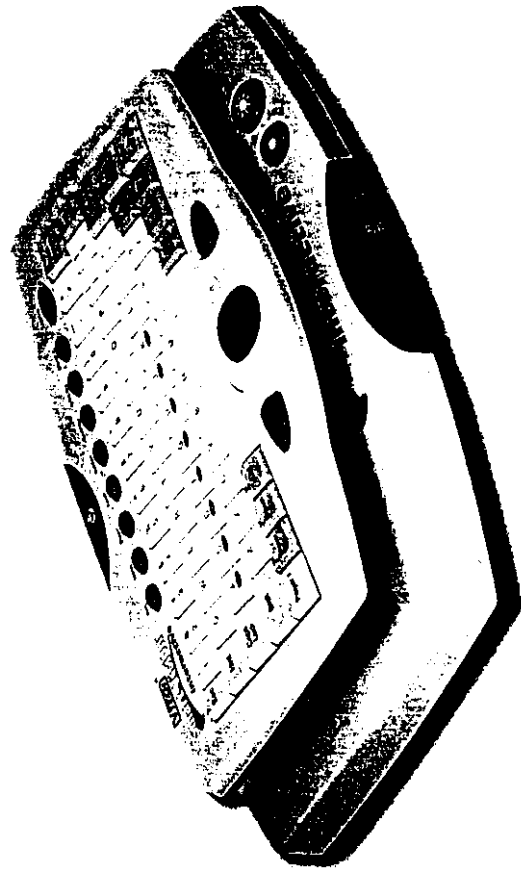


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CAUTION: Adult Assembly Required.
Functional Sharp Points And Sharp Edges Exist.
Care Should Be Taken In Unpacking And Assembly.

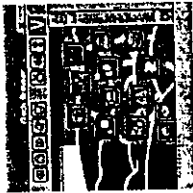
Dear Parent:

At VTech® we know that a child has the ability to do great things. That's why all of our electronic learning products are uniquely designed to develop a child's mind and allow them to learn to the best of their ability. Whether it's learning about letters, numbers, geography or algebra, all VTech® learning products incorporate advanced technologies and extensive curriculum to encourage children of all ages to reach their potential.

When it comes to providing interactive products that enlighten, entertain and develop minds, at VTech® we see the potential in every child.

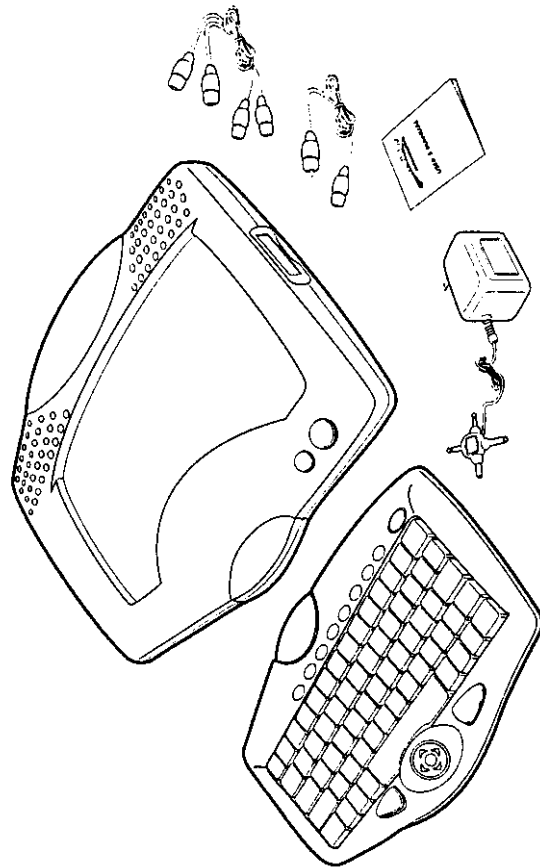
Chapter 1 Introduction to the unit

Smart Vision™ Interactive is a TV interactive learning system which has an simulated "Web Site" format. The 42 educational activities are presented in an Internet style with a browser and various linked "Web simulated pages". Smart Vision™ Interactive learning system teaches vocabulary, reading, spelling, math, geography, logic, music, typing and much more.



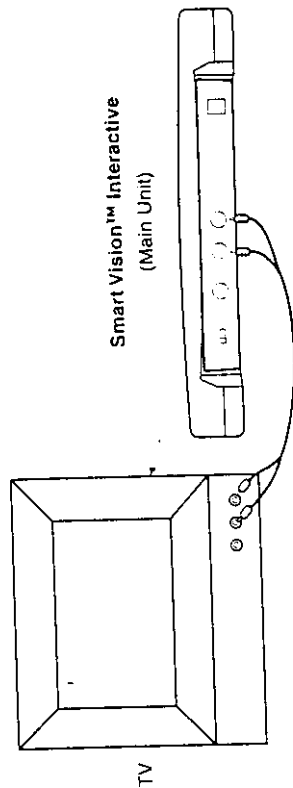
Chapter 2 Included in the Package

- Smart Vision™ Interactive main unit
- Infrared Keyboard
- 1 Video & Audio Cable
- 1 RF Aerial connection Cable
- 1 Instruction Manual
- 9 volt 500mA AC Adaptor



Chapter 3 Connecting Smart Vision™ Interactive to your TV/VCR

Connection through Video/Audio Sockets to a TV

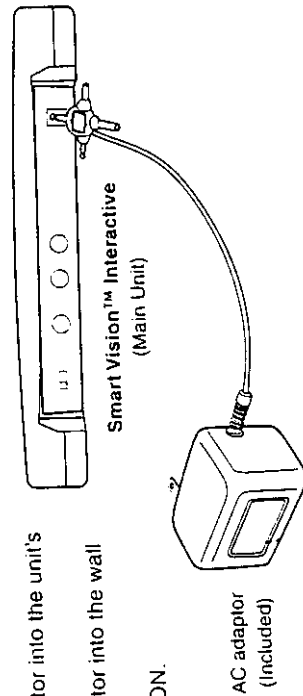


For a TV or VCR that has a Video/Audio jack, plug in one end of the Video Cable to the Video Out of the Smart Vision™ Interactive learning system and plug the other end into the TV or VCR Video In. Plug in one end of the Audio Cable to the Audio Out on the Smart Vision™ Interactive learning system and connect the other end of the Audio Cable to the Audio In of the TV or VCR. Set your TV or VCR from TV to Video (AV) on the remote control or on the front of the TV set. For more detail consult your television handbook.

AC Adaptor Installation

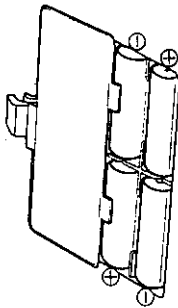
We recommended the use of the standard 9-volt, center-positive AC adaptor that is supplied.

1. Plug the adaptor into the unit's adaptor jack.
2. Plug the adaptor into the wall socket.
3. Turn the unit ON.



Keyboard battery Installation:

1. Locate the battery cover on the bottom of the Infrared Keyboard.
2. Remove the battery cover.
3. Insert 4 "AA" batteries as illustrated. Do not use rechargeable batteries.
4. Replace the battery cover.



Note :

If the keyboard suddenly stops working, you can press any key to see the red light at the front of the keyboard. If the red light is off when you press the key, that means the problem may be caused by weak batteries. Please install a new set of batteries and try the unit again.

Please remove the batteries from the keyboard when you are not going to use it for an extended period of time. The batteries will run down easily if you press the keys when you carry the unit from one place to another.

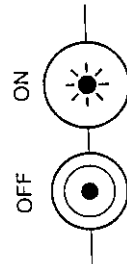
Batteries Notice

- Install batteries correctly observing the polarity (+ , -) signs to avoid leakage.
- Do not use rechargeable batteries.
- Do not mix old and new batteries.
- Do not use batteries of different types.
- Remove exhausted or new batteries from equipment when you are not going to use the unit for a long time.
- Do not dispose of batteries in fire.
- Do not attempt to recharge ordinary batteries.
- The supply terminals are not to be short-circuited.

Chapter 4 Features

On/Off Buttons

Turn on your Smart Vision™ Interactive learning system by pressing the ON button. Turn off the unit at any time by pressing the OFF button.



Auto Power Off

If there is no input to Smart Vision™ Interactive learning system for about 15 minutes, the unit will switch off to save power. Press the ON button again to switch the unit back on. We recommend that you turn the unit OFF when not in use.

Volume Control

Use the normal volume control on your TV.

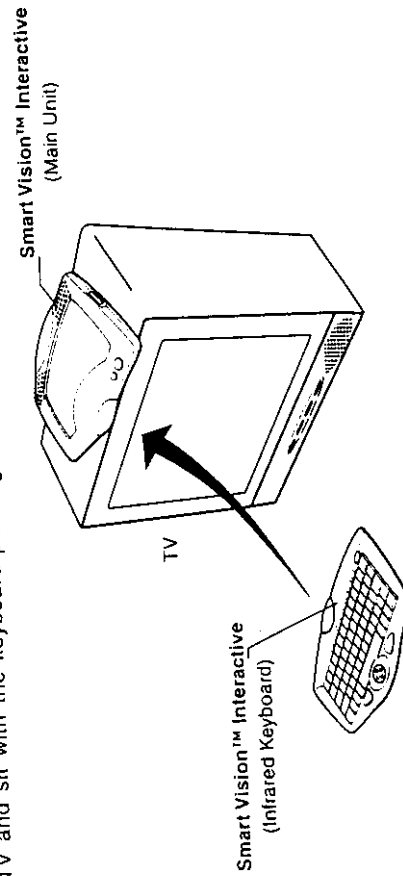
TV Picture Adjustment

If the picture displayed on your TV screen does not look centered, hold down the CTRL key and use the arrow keys to adjust the picture.

Chapter 5 Keyboard and Cursor

Remote Control Keyboard

The Smart Vision™ Interactive learning system has an infrared connection between the keyboard and the main unit. Children can place the main unit on top of the TV and sit with the keyboard pointing in the direction of the TV and main unit.

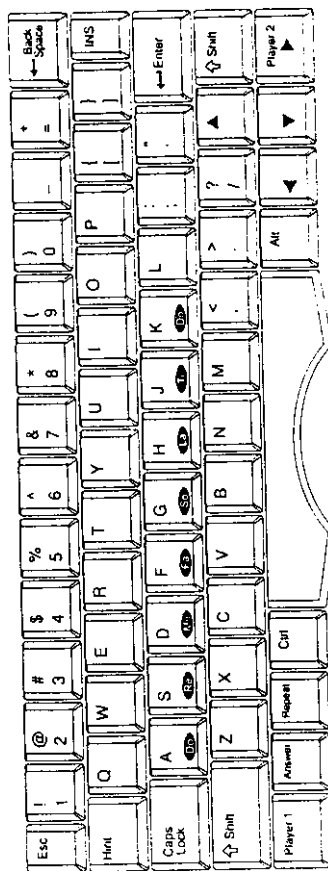


Keyboard Key Click Sound On/Off

The keyboard has built-in sound effects. The default setting is OFF. The sound effects can be turned ON if you press Ctrl and K together. The sound effects turn OFF if you press these two keys (Ctrl and K) again.

Special Keys on Keyboard

The Smart Vision™ Interactive learning system has a full keyboard so you can interact with the unit just like on a computer.



Directional Cursor Pad

Directional Cursor Pad



This is a feature which is often found on portable computers. Press the Directional Cursor Pad to move the on-screen cursor. Press either of the buttons on the side of the Cursor Pad to confirm your selection.



Esc

Press this key to go back to the previous level, escape from the current activity, exit pop-up windows or cancel a selection you have made.



Help

Press this key to display a Help pop-up window.



Home

Press this key to return to the main menu.



Player

Press this key to display a player mode pop-up window.



Level

Press this key to display a level selection pop-up window.



Symbol

Press this key to display a symbol table pop-up window.



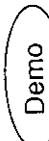
PG UP

Press this key to scroll up one screen of the graphic screen or scroll up one text line in text screen.



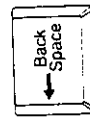
PG DN

Press this key to scroll down one screen of the graphic screen or scroll down one text line in text screen.



DEMO

Press this key to activate the demonstration mode. The Smart Vision™ Interactive learning system will play the demonstration automatically during demonstration mode until you press any key to stop.



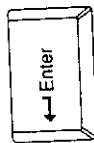
Back Space

Press this key to delete the character just to the left of the cursor position.



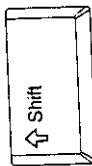
INS

Press this key when you want to overwrite the text during editing. Press this key again to return to insert mode.



Enter

After typing or choosing an answer, press this key to confirm your selection.



Shift

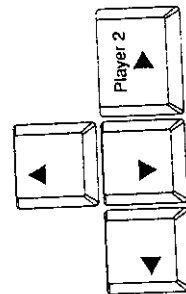
This key lets you access the Shift button "sub-functions".



Player 1 / Player 2

When you are in 2-player mode, the players are in head-to-head competition. When prompted by a question use your Player One or Player Two keys to earn the right to answer.

(Note: these buttons are used in activities with 2-player mode)



Arrow keys

Press these keys to move the highlight.



Alt

The main use of this key is to access characters or symbols located on the top right corner of keys.



Ctrl

This key lets you access the Ctrl button "sub-functions". Also, hold down the Ctrl key and use the arrow keys to move the activity screen up, down, left or right to fit your TV screen.



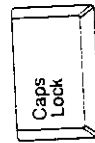
Repeat

Press this key to have the unit repeat a question or instruction.



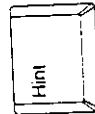
Answer

Press this key to see the correct answer to a question. Only use this key in an application where you are being asked a question.



Caps Lock

Press this key to lock the keyboard in upper case mode. Once this key is pressed all typed letters will appear in upper case. Press the key again to return to normal typing mode.



Hint

Press this key for a hint to questions.

Chapter 6 VTech® Simulated Browser

How to play

1. Turn on the power to the main unit.
2. You will see the opening animation of the Smart Vision™ Interactive learning system.
(You can skip this by pressing any key.)
3. Then you will see the main menu called VTech® Browser.

View Demonstration

Press the Demonstration icon from the main menu to see the demonstration of the Smart Vision™ Interactive learning system. The user can also find a Demonstration button in each sub-menu and most instruction pages of activities.

Demonstration is an animation to show the game play of the activities step by step. During the demonstration, the auto-power-off will not activate.

VTech® Browser

VTech® Browser is the main menu of the Smart Vision™ Interactive learning system. You can access every simulated web site from this page. You can use the cursor or keyboard to move the cursor to select or highlight the icons and objects. When the icon is highlighted, a bubble that contains the name of the icon appears. Click on the icon with the Directional Cursor buttons to open that site. The name of the site will be displayed at the top of the screen.

When the cursor moves over the icon, a bubble will display the name of the site. The cursor will change to a Hand if that area is active.

The Main Menu displays the 11 activity simulated web site icons. When you move the cursor over an icon, you will see some smaller activity icons displayed on the left hand side. These icons represent the activities in each simulated web site. You can click on the main simulated web site icon to enter a page displaying all the activities to be found in that simulated web site, or you can click the smaller activity icons to go directly to a particular activity.

Toolbar

This is a set of buttons displayed on the top of the screen. The buttons will vary from one site to another. The function of these buttons is illustrated below.



Back

Click Back to go back to the previous simulated web page. This button will not work if you have just started to play and you have not visited any previous sites.



Home

Click Home to go back to the main menu page.



Forward

Click Forward to go forwards to the next simulated web page.



History

History offers a convenient means of redisplaying pages you've previously viewed. It can store up to 20 histories at once. Highlight the simulated web page inside the History pop-up window first then click the OK button. Click the "X" in the top right corner to close the pop-up window. The history list will be erased after the machine is turned off.



Bookmark

Bookmark offers a convenient means to retrieve simulated web pages that you've saved. It can store up to 10 bookmarks at once. Add your favorite simulated web pages into Bookmark by pressing "Add" and delete a bookmark with "Remove". Click the "X" in the top right corner to close the pop-up window.



Display Mode

Click Display Mode to change between a graphics menu and a text-based menu. When the graphics menu is displayed, clicking this button displays the text-based menu and vice versa.

Music On/Off

Click Music On/Off to turn the music on or off.

Help

Click Help to open the Help pop-up window. This displays instructions for the Smart Vision™ Interactive learning system.

Hint

During the game, you can get hints by pressing this button. When the Hint button is used, a small "X" will be put on the button so that you cannot use it again.

Exit

During the game, you can quit and return to the sub-menu of the activity by clicking the Exit button on the Toolbar.

Timer

During the game, the timer will be shown. This tells the player how much time is left.

Scroll up/ Scroll down

Clicking the scroll up/down button can either scroll up/down one screen or one line. This depends on whether the screen type is graphic (one screen) or text (one line).

Exit (Shut Down)

To shut down this unit, click Shut Down, and then click "Yes" on the pop-up window.

Activities

There are 42 activities in the Smart Vision™ Interactive learning system. You can start an activity by pressing the icon on the Main Menu or Sub-Menu. Activities are distributed into 11 different sites.

Sites	Activities
Global Travel	Landmark Touring City Mania Landmark Locator
Typing	Typing Challenge Typing Ace
Music Studio	Music Challenge Free Play
Chat Room	David's Homepage Joanne's Homepage Brian's Homepage Ben's Homepage Mary's Homepage Mark's Homepage
Adventure Club	Adventure story 1 Adventure story 2 Adventure story 3
Theme Park	Smash and Spell 1 Smash and Spell 2 Smash and Spell 3 Smash and Spell 4 Puzzle Drawing Number Shoot
Museum	Painting Gallery Armor Exhibit Ancient Scroll Research Ancient Scroll Library
Toy Factory	Marketing Think Tank Printing Press Room Quality Control Room Assembly Line Room Shipping Room
Story Book	Comic Book Wizard Story Wizard

Loony Library	People Facts Animal Facts Invention Facts Space Facts
Shopping Fun	Addition Shop Subtraction Shop Multiplication Shop Division Shop Market Mathematics Chat

Chapter 7 Global Travel

Global Travel

The three activities inside this site introduce famous landmarks from all over the world.

Landmark Touring

This site contains interesting information about world landmarks. Move the cursor over the triangles to see a bubble containing the name of the country. Click on the triangles to read about a famous landmark from that country. Click on the Rotate the World icon to turn the globe and find more countries.

Landmark Locator

This is a game to find out about the location of landmarks.

A question will be displayed on the screen. To answer, click on the correct city triangle from the small map.

City Mania

This is a game about the world.

A question will be displayed on the screen. To answer, click the correct answer from the given choices.



Chapter 8 Typing

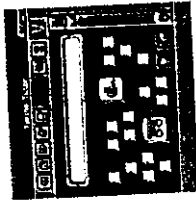
Typing

This site contains a typing tutorial and a typing game.

Typing Challenge

This is a typing tutorial.

You will see a letter displayed on the bar and on one of the fingers of the hands. Type that letter using the same finger as the one shown on the screen. Continue typing until the unit displays your Words per Minute score.



Typing Ace

This is a typing game.

Type the words before the worm reaches the apple. Continue typing until the unit displays your Words per Minute score.

Chapter 9 Music Studio

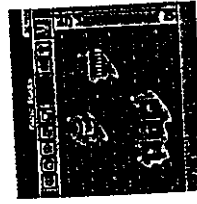
Music Studio

Have some musical fun in this site.

Music Challenge

Choose the correct answer by listening to the sound.

Listen to the beat and sequence of the drum. Then decide, from the choices displayed, which answer matches the beat and click on the correct answer.



Free Play

In this activity, you can listen to songs or play your own music.

Click on the 4 icons at the bottom left hand corner to listen to popular songs. Click on the piano keys to play your own music.

Chapter 10 Chat Room

Chat Room

This site contains word and grammar activities.

David's Homepage

Read David's message and answer his question about extra letters.

Click on the letter you would like to remove and then click the Send button to confirm.

Mark's Homepage

Read Mark's message and answer his question about missing letters.

Type in the correct letter to complete the word. If you make a mistake, press the Backspace key to delete the letter and try again. Click the Send button to confirm.

Brian's Homepage

Read Brian's message and answer his question about scrambled letters.

Type the letters displayed on the screen in the correct order to spell a word. Click the Send button to confirm.

Ben's Homepage

Read Ben's message and answer his question about present tenses.

Type in the present tense of the word displayed. If you make a mistake press the Backspace key to start again. Click the Send button to confirm.

Mary's Homepage

Read Mary's message and answer her question about past tenses.

Type in the past tense of the word displayed. If you make a mistake press the Backspace key to start again. Click the Send button to confirm.

Joanne's Homepage

Read Joanne's message and answer her questions about idioms.

Decide which of the three answer choices is correct and click on it to answer the question.

Chapter 11 Adventure Club

Adventure Club

In this site you can make your own adventure by choosing exciting pathways for the beginning, middle and end of the story.

All stories

When you enter this activity, you will see a signpost with three pathways. First, choose adventure 1, 2 or 3 by clicking on one of the signs. You will see the beginning of the story. Read the middle of the story by clicking the Scroll Down button to reach the end. Choose the middle of the story and then choose path A, B or C to read the end of the story.



Chapter 12 Theme Park

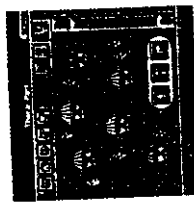
Theme Park

This site contains fun word and number games.

Smash and Spell 1

Smash the plate to spell the word that matches the picture.

To spell the word, place the cursor over the first letter plate you need. Click on the plate so that the ball breaks the plate. If you make a mistake, press the Backspace key to delete the unwanted letter. Continue to smash plates until you have spelled the word.



Smash and Spell 2

Smash the plate to add the missing letter.

To choose the letter you need to complete the word, place the cursor over the correct letter plate and click on it to smash the plate.

Smash and Spell 3

Smash the plate that has the extra letter.

To choose the letter you need to remove from the word, place the cursor over the extra letter plate and click on it to smash the plate.

Smash and Spell 4

Smash the plates one by one to rearrange the word.

To rearrange the word, place the cursor over the first letter plate you need. Click on the plate so that the ball breaks the plate. If you make a mistake, press the Backspace key to delete the unwanted letter. Continue to smash plates until you have spelled the word.

Puzzle Drawing

Create your own pictures with clip art.

When you enter this activity, you will see a picture area with five clip art category icons and a Erase icon along the bottom.

To paste some clip art into the drawing area, first choose a category by clicking on the icon. You can click on Sky, Land, People, Animals or Objects. Next, scroll through the pictures by clicking on the left and right arrows and click on the picture that you would like. Then move it to the drawing area with the cursor, and click again. You can add as many pictures as you like.

To clear the whole screen, click on the Erase icon.

Number Shoot

Try to get the right sum by shooting out the wrong numbers.

A target number is displayed on the right hand side of the screen. Use the falling numbers to equal the target number. Shoot the numbers you do not want by moving the dart right and left and clicking to release the dart. The black balls return your number to zero.

Chapter 13 Museum

Museum

This site contains grammar, spelling and logic games.

Painting Gallery

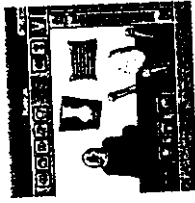
Spell the name of the object within the time limit.

Type in the word and press Enter to confirm.

Armor Exhibit

Use logic to select the correct object from the shelf.

There are five objects on the shelf. 3 objects will randomly move down to the table in turn. If the correct object has moved down to the table you will hear "See inside". Use your logic skills to work out which is the correct object. To select the object click on it or press the Letter key A, B or C when it is on the table.



Ancient Scroll Library

This is a grammar game. Delete a word from the sentence to make the sentence correct.

Read the sentence and choose which word or words need to be deleted. To remove the word, click on it with the mouse or use the directional cursor keys to highlight the word. Press Enter to confirm or click on the OK button.

Please note the following rule:
 Level 1 - Only remove 1 word
 Level 2 - Only remove 2 words
 Level 3 - Only remove 3 words

Ancient Scroll Research

This is a grammar game. Insert a space into the sentence to make the sentence correct.

Read the sentence and choose where you need to insert a space or some spaces. Move the cursor to that place and click once to add a space. When the sentence is correct, press Enter to confirm or click on the OK button.

Please note the following rule:
 Level 1 - Only insert 1 space
 Level 2 - Only insert 2 spaces
 Level 3 - Only insert 3 spaces

Chapter 14 Toy Factory

Toy Factory

This site is full of word games.

Marketing Think Tank

Spell the name of the toy to fill out the form.

Look at the picture and type in the word. If you make a mistake, use the backspace key to delete the error. Click the "Y" icon or press Enter to confirm.

Printing Press Room

Rearrange the letters to spell the word.

Click on each letter or type in the letter in order to spell the word. If you make a mistake, press the Backspace key to delete the letters. Click on the "Y" icon or press Enter to confirm.

Quality Control Room

Fill in the missing letter to complete the toy's name.

Type in the missing letter to make the word correct. If you make a mistake, press another letter to overwrite the wrong letter. Click on the "Y" icon or press Enter to confirm.

Assembly Line Room

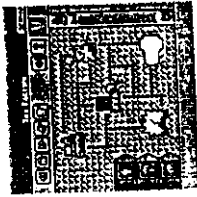
Remove the extra letter to make the word correct.

Look at the picture and the letters. Click one letter or press the letter key to remove it, so that the spelling is correct.

Shipping Room

Match the word to the picture.

Click the left and right arrow buttons to move the box with the word on it. When it is under the matching picture, press the down arrow to confirm.



Chapter 15 Story Book

Story Book

You can create your own comics and story books inside this site. When you enter this activity, you will see two icons – Story Wizard and Comic Book Wizard.

Comic Book Wizard

Create your own comic book using clip art and text.

When you enter this activity, select a layout for your comic. Click on one of the layouts shown. Then you can click on the three clip art icons (People, Animals or Objects) to paste drawings into your comic. Scroll through the pictures using the left and right arrows. Click on the picture you want, drag it onto the comic page and click again to paste it.

You can use the Erase icon to "rub out" parts of the pictures. Click on the icon and your cursor will turn into an eraser. Move it to the part you want to remove and then hold down the left cursor button. Move the eraser over the picture and it will be rubbed out. When you want to stop erasing, let the left cursor button go.

To type in text, click on the comic page where you want to start typing and type your text.

You can add or delete pages of the comic or start a new comic by clicking on the appropriate icons at the bottom of the screen.

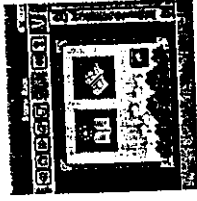
Story Wizard

Create a picture and turn it into a story.

At the top of the screen is the picture area with 5 clip art icons (People, Animals, Sky, Land or Objects), a Erase icon and a Wizard icon.

First make the picture by clicking on the clip art icons. Scroll through the pictures by clicking on the left and right arrow icons. Click the picture you want, drag it to the picture and click again to paste it. If you want to clear the screen, click on the Erase icon.

When you have finished the picture sets, click on the Wizard icon. You need a certain amount of pictures on the screen before you can read the story. If you do not have enough pictures a pop-up window will appear to ask you to add more pictures.



There are five combinations of pictures sets that you can use for your stories.

Animals	People	Objects
2	1	1
1	2	1
2	2	2
1	1	2
1	2	2

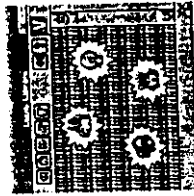
Chapter 16 Loony Library

Loony Library

This site contains interesting and funny facts.

When you enter this activity, you will see four icons – Animal Facts, Space Facts, Invention Facts and People Facts.

Click on any of these icons to read some fascinating facts about that topic. You can scroll through the facts by clicking the Back or Next icons at the bottom of the screen.

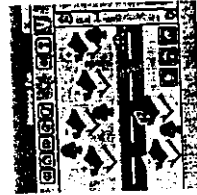


Chapter 17 Shopping Fun

Shopping Fun

The activities inside this site are about mathematics.

When you enter this activity, you will see 6 "shop" icons. Click on one to enter that activity.



Addition Shop

This is an addition game. Use the coins to pay the correct amount for the selected object.

Select an object by clicking on it. The price of the object will be displayed on the cash register. Click on the coins to make an addition problem on the bar across the screen. If you make a mistake, click on the bar to start again. When the sum adds up to the price, click the Paid icon to confirm.

Note: You can use any combination of coins to make the sum.

Subtraction Shop

This is a subtraction game. Pay the remainder by selecting the correct coins.

Select an object by clicking on it. You will see a subtraction problem on the bar across the screen. Click on the coins to find the difference. If you make a mistake, click on the bar to start again. When the difference is correct, click the Paid icon to confirm.

Note: The question may have more than one solution in level 3.

Multiplication Shop

Multiply the coins to make the price of the product.

Select an object by clicking on it. The price of the object will be displayed on the cash register. Click on the coins to make the multiplication problem on the bar across the screen equal to the price. If you make a mistake, click on the bar to start again. When the product equals the price, click the Paid icon to confirm.

Note: You may be able to click on any of the numbers in order to answer the question.

Division Shop

This is a division game. Find the price of a single product.

Select an object by clicking on it. You will see how many of those objects can be bought for a certain price. The division problem will appear on the bar across the screen. Click the coins to find the quotient. If you make a mistake, click on the bar to start again. When the quotient is correct, click the Paid icon to confirm.

Note: The question may have more than one solution in level 3.

Market

This is a mathematical trivia question game. Find the correct answer to the problem.

Read the question and click on the correct answer from the choices given.

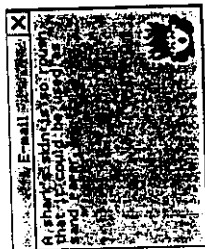
Mathematics Chat

This is a conversational math game. Find the correct answer to the problem.

Read the conversation. Work out the correct answer and click on the answer.

Chapter 18 Simulated E-mail

You will receive simulated E-mail when you are playing the Smart Vision™ Interactive learning system. These are messages about interesting facts about the world and this unit. They can appear at any time. You can just click the cross at the right hand corner of the pop-up window or wait for 10 seconds to close the mail.



Chapter 19 Care and Maintenance

CARE AND MAINTENANCE

1. Keep the unit clean by wiping it with a slightly damp cloth.
2. Keep the unit out of direct sunlight and away from direct sources of heat.
3. Remove batteries when the unit will not be in use for a long period of time.
4. Do not drop the unit on hard surfaces or try to dismantle it.
5. Do not expose the unit to moisture or water.

IMPORTANT NOTE:

Creating and developing Infant/Toddler products is accompanied by a responsibility that we at VTECH® take very seriously. We make every effort to ensure the accuracy of the information which forms the value of our products. However, errors sometimes can occur. It is important for you to know that we stand behind our products and encourage you to call our Consumer Services Department at 1-800-521-2010 in the U.S. / 1-800-267-7377 in Canada / (01235) 546810 in U.K. with any problems and/or suggestions that you might have. A service representative will be happy to help you.

Note:

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, it may cause interference with radio and television reception. It has been type tested and found to comply within the limits for a Class B computing device in accordance with the specifications in Sub-part J of Part 15 FCC, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference with radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient the receiving antenna
- relocate this product with respect to the receiver
- move this product away from the receiver

Chapter 20 Trouble Shooting

Smart Vision™ Interactive Trouble Shooting

If you turned on the Smart Vision™ Interactive learning system and there is no picture, please check the following:

1. All cables are securely connected between the Smart Vision™ Interactive learning system and the TV.
2. For connection to the TV, the TV should be tuned to channel frequency 3 or 4 – the channel on which your VCR normally operates.
3. If the keyboard suddenly stops working, you can press any key of the keyboard to see the red light in front of the keyboard. If the red light is off when you press the key, that means the problem may be caused by weak batteries. Please install a new set of batteries and try the unit again.

ADDENDUM

[REDACTED] FCC notice should be as the following:

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is needed.
- Consult the dealer or an experienced radio/TV technician for help.

Shield cables must be used with this unit to ensure compliance with the Class B FCC limits.

91-01083-001

INTERTEK TESTING SERVICES

EXHIBIT 8

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

8.0 Miscellaneous Information

This miscellaneous information includes details of the test procedure and calculation of factors such as pulse desensitization and averaging factor.

INTERTEK TESTING SERVICES

8.1 Discussion of Pulse Desensitization

The determination of pulse desensitivity was made in accordance with Hewlett Packard Application Note 150-2, *Spectrum Analysis ... Pulsed RF*.

Pulse desensitivity was not applicable for this device.

INTERTEK TESTING SERVICES

8.2 Calculation of Average Factor

Averaging factor in dB = $20 \log (\text{duty cycle})$

The specification for output field strengths in accordance with the FCC rules specify measurements with an average detector. During testing, a spectrum analyzer incorporating a peak detector was used. Therefore, a reduction factor can be applied to the resultant peak signal level and compared to the limit for measurement instrumentation incorporating an average detector.

The time period over which the duty cycle is measured is 100 milliseconds, or the repetition cycle, whichever is a shorter time frame. The worst case (highest percentage on) duty cycle is used for the calculation. The duty cycle is measured by placing the spectrum analyzer in zero scan (receiver mode) and linear mode at maximum bandwidth (3 MHz at 3 dB down) and viewing the resulting time domain signal output from the analyzer on a Tektronix oscilloscope. The oscilloscope is used because of its superior time base and triggering facilities.

This device does not use the pulse code modulation.

It is not necessary to apply average factor to the measuring results.

INTERTEK TESTING SERVICES

8.3 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of TV interface devices operating under Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 1992.

The equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are varied during the testing to search for maximum signal levels.

Detector function for radiated emissions, TV interface device output and spurious conducted emissions/antenna transfer switch measurements are in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.2.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 450 kHz to 30 MHz. For TV interface device output and spurious conducted emissions measurements, the range scanned is 30 to 1000 MHz.

INTERTEK TESTING SERVICES

8.3 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted emission measurements are made as described in ANSI C63.4 - 1992.

The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater below 1000 MHz. Where pulsed transmissions of short enough pulse duration were sent, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 1 MHz is used.

Radiated emission measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, but those measurements taken at a closer distance are so marked.